Water Resources Division's Aquatic Invasive Species of the Week!

FOR THE WEEK OF:

APRIL 29-May 3, 2013

Whirling Disease

Myxobolus cerebralis

Whirling Disease is the common name for an infection in salmonids caused by *Myxobolus cerebralis* (originally thought to be a protozoan, but is a very primitive form of animal).

Distribution: Native to Eurasia. First documented in North America in the 1950's. Currently, found in Michigan waters.

Photo by: Thomas L. Weeborn Jr. USFWS

Mode of transmission: The most common vector is through decaying fish. A single fish can carry thousands to millions of spores. Transmission can also occur from contaminated fishing equipment. Removing mud, cleaning and drying greatly reduces the threat of spreading whirling disease.

Photo by: Colorado Parks and Wildlife

Common characteristics of infected fish:

-Circular movements (whirling)

-Vertebral column deformities (older fish)

-Black tail (younger fish)

-Shortened gill cover

*Some fish may show no visible signs and are carriers

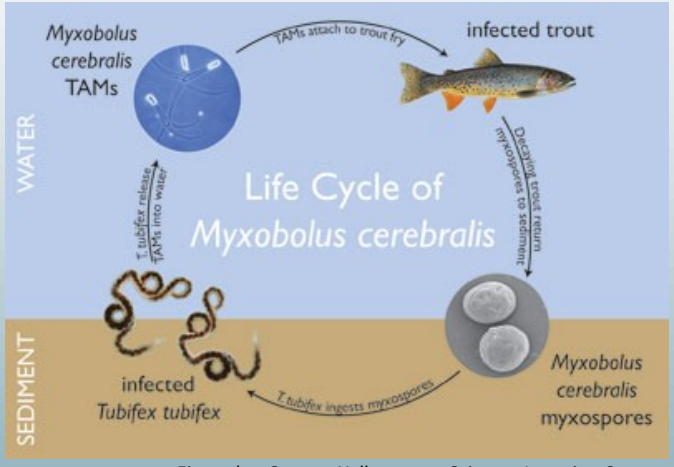

Figure by: Greater Yellowstone Science Learning Center

Life cycle: *Myxobolus cerebralis* has a two-host life cycle, alternating between salmonid fish and a benthic worm, *Tubifex tubifex*. Myxospores are released into the sediment by infected, decomposing fish carcasses. These spores can survive in the sediment for 30 years! The myxospores are then eaten by the tubifex worms which then convert from spores into the infectious forms, Triatinomyxon (TAM). The tubifex worm then releases the TAM where it comes in contact with a fish and repeats the cycle.

Problem: The inability to feed effectively due to poor swimming performance, causes many of the young to die. Fish are also easy prey due to their inability to avoid predators.

Management/Prevention: There is no known cure for fish infected. However, whirling disease can be controlled in hatchery environments with careful management. Its effect on wild fish cannot be controlled. Generally, once the parasite is established in a stream it cannot be eradicated. Visit www.ncrac.org/node/251 to learn more!